

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method in a data processing system for monitoring execution of instructions, the method comprising:
 - executing a program;
 - identifying a routine that is used more than a threshold number of times during execution of the program as a routine of interest;
 - responsive to identifying the routine of interest during execution of the program, dynamically associating instructions in the identified routine of interest with a set of performance indicators to form a modified routine, wherein the set of performance indicators comprises one of a set of performance indicators comprising one or more bits located in fields within the instructions and a set of performance indicators comprising metadata located in a shadow memory, and wherein the set of performance indicators identify that the instructions are to be monitored; and
 - responsive to execution of an instruction in the modified routine during continued execution of the program, incrementing a counter, wherein the counter provides a value identifying a number of times that the instruction in the modified routine is executed.
2. (Previously presented) The method of claim 1 further comprising:
 - associating instructions in a second routine of interest with a second set of performance indicators to form a second modified routine; and
 - responsive to execution of an instruction in the second modified routine, incrementing a second counter, wherein the second counter provides a value identifying a number of times that the instruction in the second modified routine is executed.
- 3.-8. (Canceled)
9. (Currently amended) A data processing system for monitoring execution of instructions, the data processing system comprising:
 - executing means for executing a program;
 - identifying means for identifying a routine that is used more than a threshold number of times during execution of the program as a routine of interest;

associating means, responsive to identifying the routine of interest during execution of the program, for dynamically associating instructions in the identified routine of interest with a set of performance indicators to form a modified routine, wherein the set of performance indicators comprises one of a set of performance indicators comprising one or more bits located in fields within the instructions and a set of performance indicators comprising metadata located in a shadow memory, and wherein the set of performance indicators identify that the instructions are to be monitored; and

incrementing means, responsive to execution of an instruction in the modified routine during continued execution of the program, for incrementing a counter, wherein the counter provides a value identifying a number of times that the instruction in the modified routine is executed.

10. (Previously presented) The data processing system of claim 9 wherein the associating means is a first associating means and the incrementing means is a first incrementing means and further comprising:

second associating means for associating instructions in a second routine of interest with a second set of performance indicators to form a second modified routine; and

second incrementing means, responsive to execution of an instruction in the second modified routine, for incrementing a second counter, wherein the second counter provides a value identifying a number of times that the instruction in the second modified routine is executed.

11.-16. (Canceled)

17. (Currently amended) A computer program product, comprising:

[[in]] a ~~recordable-type~~ computer ~~readable~~ recordable medium having computer usable program code for monitoring execution of instructions, the computer program product comprising:

first instructions for executing a program;

second instructions for identifying a routine that is used more than a threshold number of times during execution of the program as a routine of interest;

third instructions, responsive to identifying the routine of interest during execution of the program, for dynamically associating instructions in the identified routine of interest with a set of performance indicators to form a modified routine, wherein the set of performance indicators comprises one of a set of performance indicators comprising one or more bits located in fields within the instructions and a set of performance indicators comprising metadata located in a shadow memory, and wherein the set of performance indicators identify that the instructions are to be monitored; and

fourth instructions, responsive to execution of an instruction in the modified routine during continued execution of the program, for incrementing a counter, wherein the counter provides a value identifying a number of times that the instruction in the modified routine is executed.

18. (Previously presented) The computer program product of claim 17 further comprising:

fifth instructions for associating instructions in a second routine of interest with a second set of performance indicators to form a second modified routine; and

sixth instructions, responsive to execution of an instruction in the second modified routine, for incrementing a second counter, wherein the second counter provides a value identifying a number of times that the instruction in the second modified routine is executed.

19.-24. (Canceled)

25. (New) A method in a data processing system for monitoring execution of instructions, the method comprising:

executing a program;

identifying a routine that is used more than a threshold number of times during execution of the program as a first routine of interest;

responsive to identifying the first routine of interest during execution of the program, dynamically associating first instructions in the identified first routine of interest with a first set of performance indicators to form a first modified routine, wherein the first set of performance indicators comprises one of a first set of performance indicators comprising one or more bits located in fields within the first instructions and a first set of performance indicators comprising first metadata located in a first shadow memory, and wherein the first set of performance indicators identify that the first instructions are to be monitored;

responsive to execution of an instruction of the first instructions in the first modified routine during continued execution of the program, incrementing a first counter, wherein the first counter provides a value identifying a number of times that the instruction of the first instruction in the first modified routine is executed;

associating second instructions in a second routine of interest with a second set of performance indicators to form a second modified routine, wherein the second set of performance indicators comprises one of a second set of performance indicators comprising one or more bits located in fields within the

second instructions and a second set of performance indicators comprising second metadata located in a second shadow memory, and wherein the second set of performance indicators identify that the second instructions are to be monitored; and

responsive to execution of an instruction of the second instructions in the second modified routine, incrementing a second counter, wherein the second counter provides a value identifying a number of times that the instruction of the second instructions in the second modified routine is executed.